

CITY OF PARKER (PWS 7220051) SOURCE WATER ASSESSMENT FINAL REPORT

June 28, 2002



State of Idaho Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

This report, *Source Water Assessment for City of Parker, Fremont County, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of Parker drinking water system consists of two well sources. The wells are located within close proximity to one another and draw from the same ground water source. Therefore, both wells have similar delineation zones and potential contaminant sources. Wells #1 and #2 have several recorded detections of verified microbial contamination and recorded detections of trace amounts of the inorganic contaminant (IOC) nitrate. Aside from these recorded contaminants, this system has high quality drinking water. The system has no recorded synthetic organic contaminants (SOCs) or volatile organic contaminants (VOCs). The system has a low susceptibility rating for IOC (excluding nitrate), VOC and SOC contamination. Because of historic detections of coliform bacteria the City of Parker's drinking water system automatically has a high susceptibility rating for microbial contamination. City of Parker should be aware that the potential for contamination is substantial due to the presence of major agricultural land use practices. In addition, the delineation zone for this system crosses a nitrate priority area related to the high level of agriculturally related fertilizer that is routinely applied to cultivated land.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For City of Parker, drinking water protection activities should focus on finding and eliminating the source of microbial contamination. Microbial contamination is a serious threat to human health. City of Parker should also correct any deficiencies outlined in the 1998 sanitary survey. A sanitary survey inspection is conducted every five years with the purpose of determining the physical condition of a water system's components and its capacity. There should also be a focus on the implementation of practices aimed at reducing the leaching of agricultural chemicals and nitrate from agricultural land within the designated source water areas. Given that much of the designated protection area is outside the direct control of City of Parker, partnerships with state and local agencies, and industry groups should be established. These collaborative efforts are critical to the success of drinking water protection. All wells should maintain sanitary survey standards regarding wellhead protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil and Water Conservation District, and the Natural Resources Conservation Service. A community with a fully developed drinking water protection program will incorporate many strategies. For assistance in developing protection strategies please contact the Idaho Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR CITY OF PARKER DRINKING WATER FACILITY, PARKER, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings used to develop the assessment also is attached.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a drinking water protection program should be determined by the local community based on its own needs and limitations. Wellhead or drinking water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The public drinking water system for City of Parker is comprised of two ground water wells that serve approximately 288 people through 111 connections. The wells are located within close proximity of one another at the city's facilities immediately north of town (Figure 1).

There have been several repeat detections of microbial contamination in ground water. Additionally, there have been detections of trace amounts of the IOC nitrate at levels below the current MCL for that contaminant. No VOCs, SOC's other IOCs aside from nitrite have been detected in the well water. The delineation zone for Wells #1 and #2 does cross a nitrite priority area.

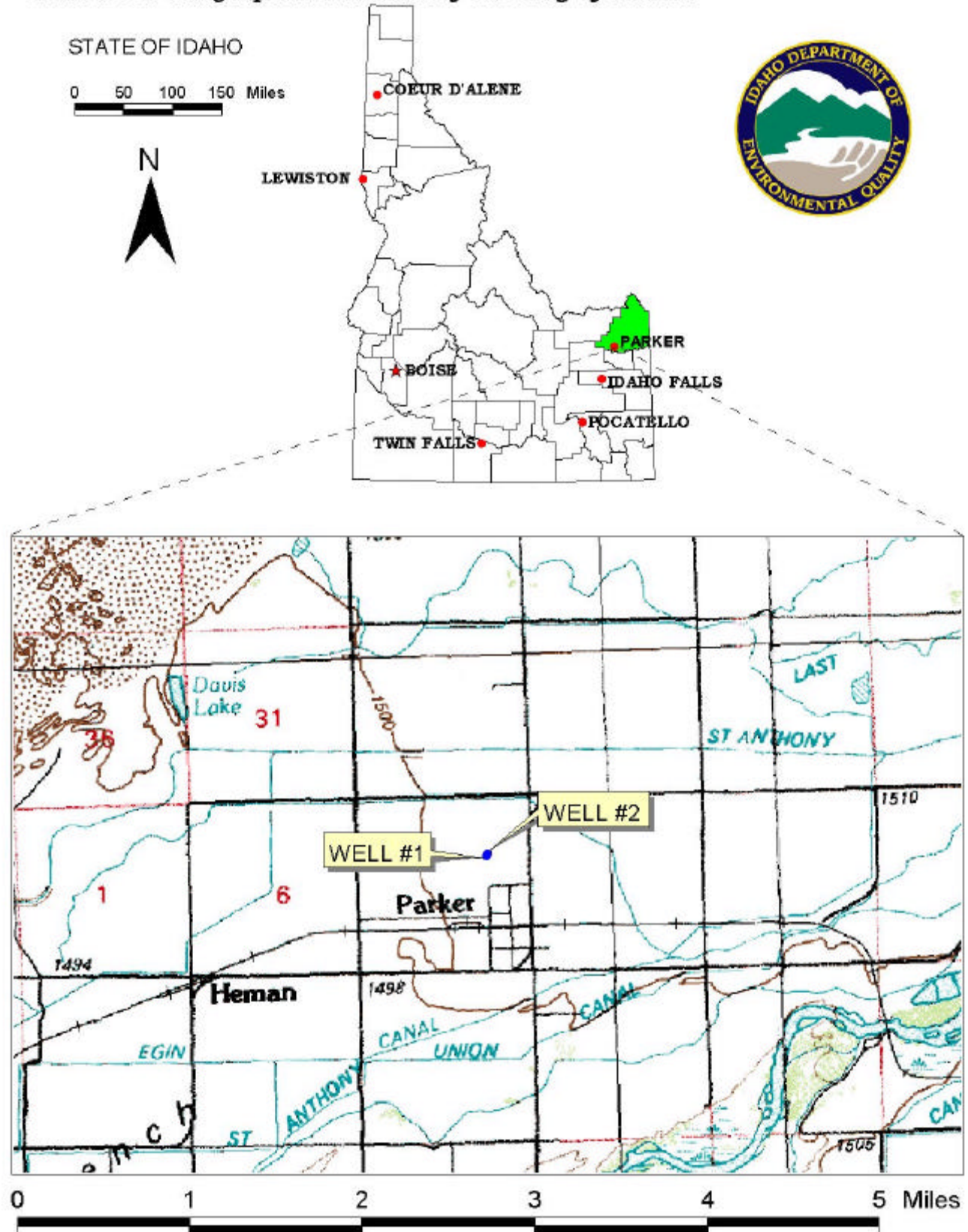
Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ contracted with Washington Group, International (WGI) to perform the delineations using a refined computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water associated with the upper Eastern Snake River Plain (ESRP) aquifer in the vicinity of both City of Parker wells. The computer model used site specific data, assimilated by WGI from a variety of sources including the City of Parker operator report, other local area well logs, and hydrogeologic reports (detailed below).

The ESRP is a northeast trending basin located in southeastern Idaho. Ten thousand square miles of the basin are primarily filled with highly fractured layered Quaternary basalt flows of the Snake River Group, which are intercalated with terrestrial and lacustrine sediments along the margins (Garabedian, 1992, p. 5). Individual basalt flows range from 10 to 50 feet in thickness and average 20 to 25 feet (Lindholm, 1996, p. 14). Basalt is thickest in the central part of the eastern plain and thins toward the margins. Whitehead (1992, p. 9) estimates the total thickness of the flows to be as great as 5,000 feet. A thin layer (0 to 100 feet) of windblown and fluvial sediments overlies the basalt.

The plain is bound on the northeast by rocks of the Yellowstone Group (mainly rhyolite) and Idavada Volcanics to the southwest. The Snake River flows along part of the southern boundary and is the only drainage that leaves the plain. Rivers and streams entering the plain from the south are tributary to the Snake River. Other than the Big and Little Wood rivers, rivers entering from the north vanish into the highly transmissive basalts of the Snake River Plain aquifer.

FIGURE 1. Geographic Location of the City of Parker



The layered basalts of the Snake River Group host one of the most productive aquifers in the United States. The aquifer is generally considered unconfined, yet it may be locally confined in some areas because of inter-bedded clay and dense unfractured basalt (Whitehead, 1992, p. 26). Whitehead (1992, p. 22) reports that well yields of 2,000 to 3,000 gal/min are common for wells open to less than 100 feet of the aquifer. Lindholm (1996, p. 18) estimates aquifer thickness to range from several hundred feet near the plain's margin to thousands of feet near the center.

The majority of aquifer recharge results from surface water irrigation activities (incidental recharge), which divert water from the Snake River and its tributaries (Ackerman, 1995, p. 4, and Garabedian, 1992, p. 11). Natural recharge occurs through stream losses, direct precipitation, and tributary basin underflow.

Regional ground water flow is to the southwest paralleling the basin (Cosgrove et al., 1999, p. 21; deSonneville, 1972, p. 78; Garabedian, 1992, p. 48; and Lindholm, 1996, p. 23). Ground water flow direction at the local scale is thought to be highly variable due to preferential flow paths through the fractured and layered basalts.

The delineated source water assessment area for both wells is similar because both wells are of equal depth, draw from the same ground water source and are situated in close proximity to one another. The overlapping delineation zones can best be described as wedge-shaped corridors approximately one mile long and 1/2 mile wide and extending to the northeast of the City of Parker (Figure 2). The delineation zone consists of a 3-year, 6-year and 10-year TOT. The actual data used by WGI in determining the source water assessment delineation areas are available from DEQ upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of groundwater contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

Land use within the immediate area of the City of Parker drinking water system consists of residences, a minor highway and irrigated agricultural land.

It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, including educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted in April 2001. The first phase involved identifying and documenting potential contaminant sources within the City of Parker Source Water Assessment Areas (Figure 2) through the use of computer databases and Geographic Information System maps developed by DEQ. The second, or enhanced, phase of the contaminant inventory involved contacting the operator to identify and add any additional potential sources in the area.

The delineated source water area for both wells encompasses similar corridors of land extending from the well sites to the northeast. Both well delineation zones contain the same single potential contaminant site. This site is a permitted, active groundwater injection well for return irrigation water (Table 1).

Table 1. City of Parker Wells #1 & #2, Potential Contaminant Inventory

SITE #	Source Description	TOT Zone ¹ (years)	Source of Information	Potential Contaminants ²
1	Injection well	3	Database Research	IOC, SOC

¹ TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead

² IOC = inorganic chemical

Figure 2. City of Parker Delineation Map and Potential Contaminant Source Locations

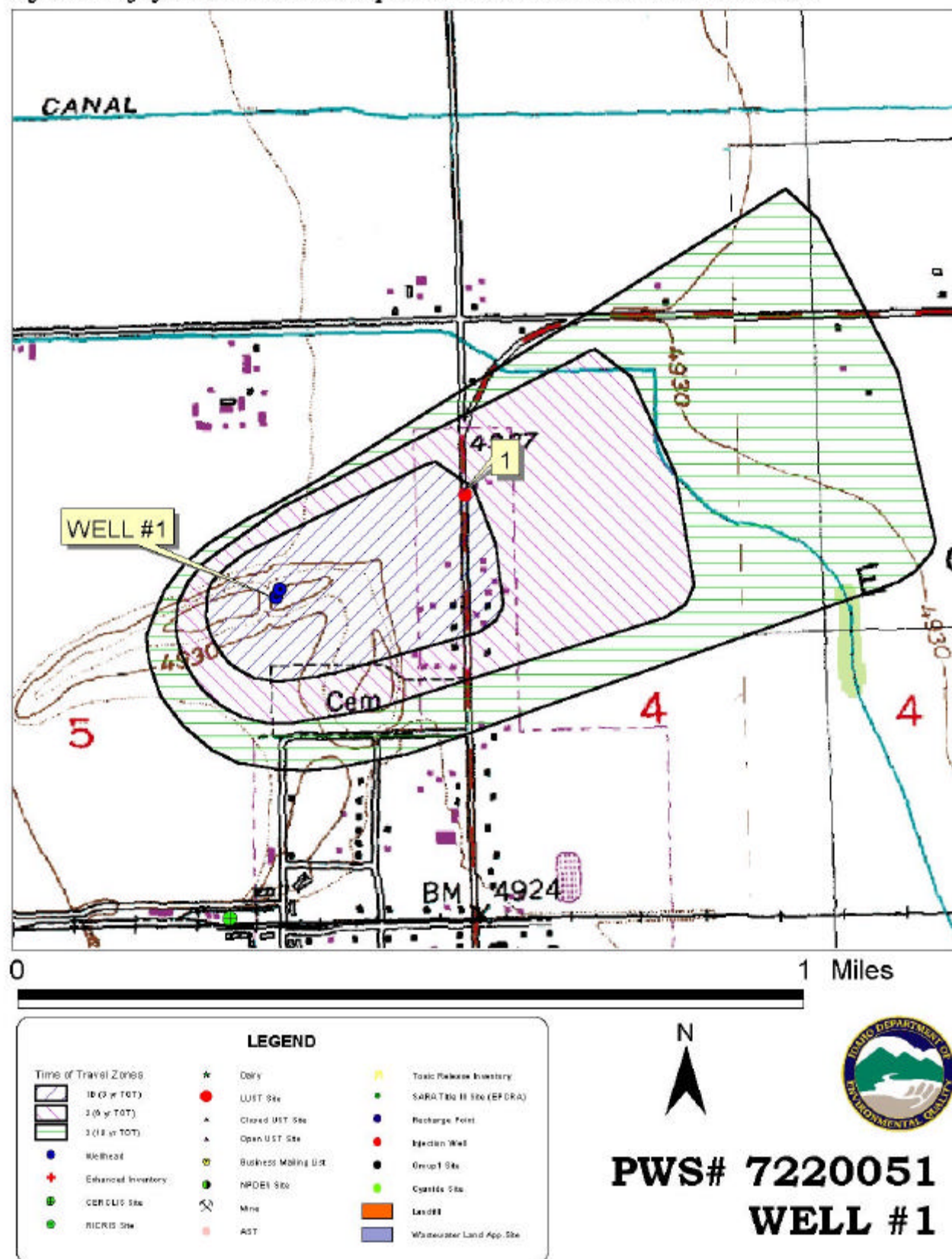
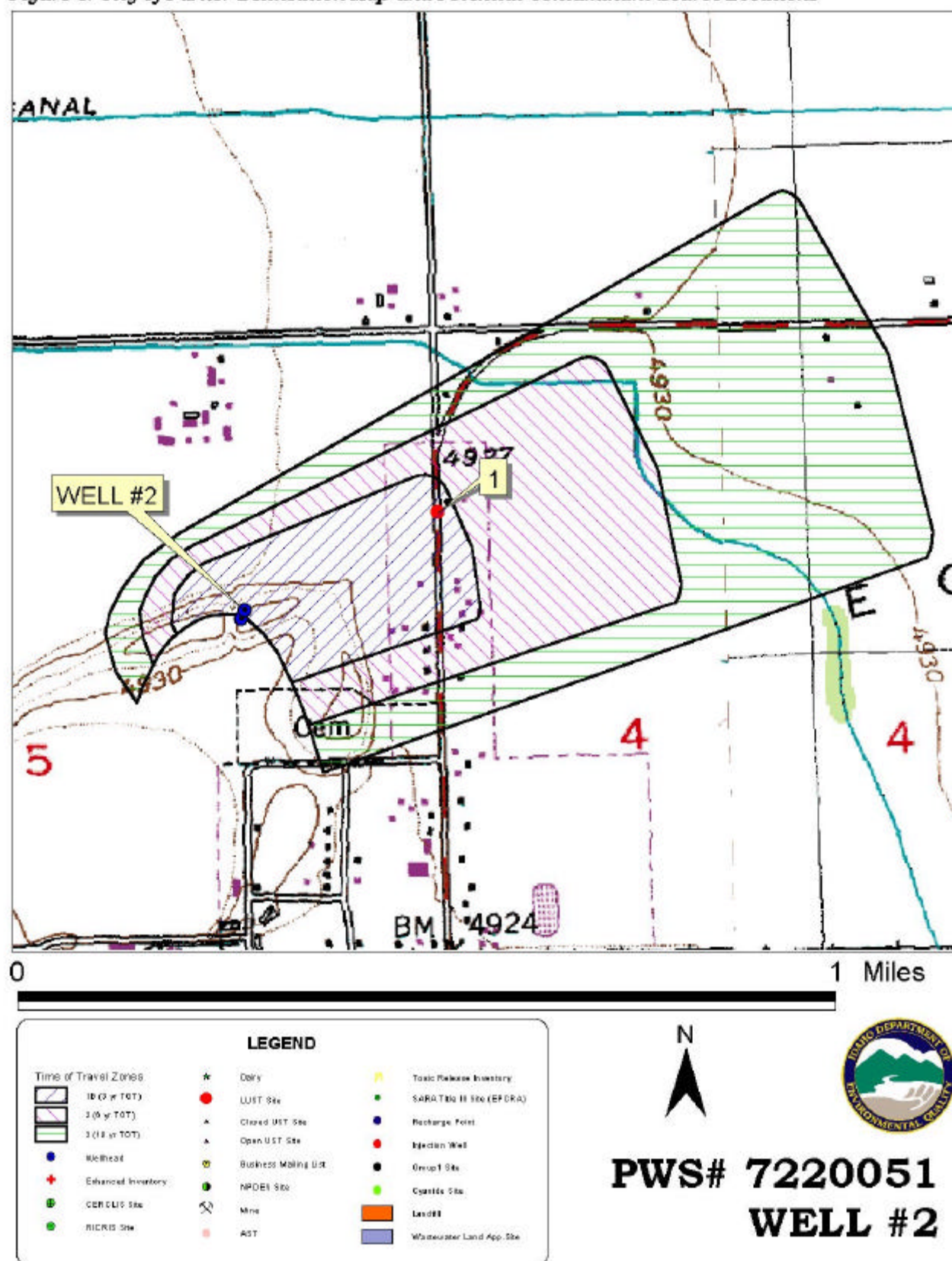


Figure 3. City of Parker Delineation Map and Potential Contaminant Source Locations



Section 3. Susceptibility Analyses

The water system's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

Hydrologic sensitivity ranks low in potential risk for both City of Parker wells (Table 2). This is a result of the soils being in the poor to moderate drainage class and the presence of an effective aquitard above the source water to help retard the downward movement of contaminants.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in sanitary surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced.

The well construction scores for Well # 1 and Well #2 are in the low-risk range. Well logs for both wells indicate that the casing and annular seal were completed in clay probably resulting in a good seal and a low likelihood of surface contamination descending to the water table. Both wells appear to meet current public water system (PWS) construction standards. The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all PWSs to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. Table 1 of the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells.

Potential Contaminant Source and Land Use

Although there is only one known potential contaminant source within both wells' delineation zones the system automatically rates high risk for microbial contaminants (i.e. coliform bacteria) in the land use portion of the scoring. This automatic high-risk rating is due to the presence of historic repeated detections of coliform bacteria. Land use related scoring for SOC's (i.e. pesticides) and VOC's (i.e. petroleum products) rated in the medium risk range. It should be noted that the delineation zones for both wells fall within a nitrate priority area due to high levels of nitrogen fertilizer use, herbicide use, and total ag-chemical use. Although nitrite is present, the wells have consistently recorded this IOC contaminant at levels below the nitrate MCL of 10 mg/l. No VOC's or SOC's have been detected in well water for this system.

Final Susceptibility Ranking

A detection above a drinking water standard MCL or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well despite the land use of the area because a pathway for contamination already exists. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores.

Table 2. Summary of City of Parker Susceptibility Evaluation

Well	Susceptibility Scores ¹									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
		IO C	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well #1	L	M	M	M	H	L	L	L	L	H*
Well #2	L	M	M	M	H	L	L	L	L	H*

¹H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility, H* Final risk rating is automatically high due to historic high levels of beryllium and repeated detections of microbials, IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Susceptibility Summary

Overall, both City of Parker wells rate high-risk for microbial contamination and low-risk for IOC, VOC and SOC categories of potential contamination (Right side of Table 2). The poor to moderate drainage nature of the soils and lack of potential contaminant sources balanced against the intense agricultural practices, the high county-wide use of agricultural chemicals, repeated detections of microbial contamination and the presence of potential contaminant sources are major factors in this scoring.

Section 4. Options for Drinking Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective drinking water protection program is tailored to the particular local drinking water protection area. A community with a fully developed drinking water protection program will incorporate many strategies. For City of Parker, drinking water protection activities should focus on correcting any deficiencies outlined in the 1998 sanitary survey. Coliform bacteria in drinking water represent a substantial threat to human health. If microbial contamination recurs, it will be imperative that the source of microbial contamination be found and eliminated. Additionally, there should be a focus on the implementation of practices aimed at reducing the leaching of agricultural chemicals from agricultural land within the designated source water areas and awareness of the potential contaminant sources in the area. Given that much of the designated protection areas are outside the property boundary of the City of Parker, partnerships with state and local agencies, and ag-industry groups should be established. These collaborative efforts are critical to the success of drinking water protection. The well should be maintained to sanitary survey standards regarding wellhead protection. Continued vigilance in keeping the wells protected from surface flooding can also keep the potential for contamination reduced. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the short term. Drinking water protection activities for agriculture should be coordinated with the Idaho Department of Agriculture, the Soil Conservation Commission, the local Soil and Water Conservation District, and the Natural Resources Conservation Service.

Assistance

Public water supplies and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Idaho Falls Regional DEQ Office (208) 528-2650

State DEQ Office (208) 373-0502

Website: <http://www2.state.id.us/deq>

Water suppliers serving fewer than 10,000 persons may contact John Bokor, Idaho Rural Water Association, at 1-800-962-3257 for assistance with wellhead protection strategies.

POTENTIAL CONTAMINANT INVENTORY

LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System)

– Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

- Ackerman, D.J., 1995, Analysis of Steady-State Flow and Advective Transport in the Eastern Snake River Plain Aquifer System, Idaho, U.S. Geological Survey Water-Resources Investigations Report 94-4257, I-FY95, 25 p.
- Cosgrove, D.M., G.S. Johnson and S. Laney, 1999, Description of the IDWR/UI Snake River Plain Aquifer Model (SRPAM), Idaho Water Resources Research Institute, 95 p.
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- Lindholm, G.F., 1996, Summary of the Snake River Plain Regional Aquifer-System Analysis in Idaho and Eastern Oregon, U.S. Geological Survey Professional Paper 1408-A, 59 p.
- Whitehead, R.L., 1992, Geohydrological Framework of the Snake River Plain Regional Aquifer System, Idaho and Eastern Oregon, U.S. Geological Survey Professional Paper 1408-B, I-FY92, 32 p.

Attachment A

City of Parker
Susceptibility Analysis
Worksheets

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.273)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report
PARKER CITY OF WELL #1 Public Water System Number 722005112/17/01 3:18:26 PM

1. System Construction

SCORE

Drill Date	4/27/78	
Driller Log Available	YES	
Sanitary Survey (if yes, indicate date of last survey)	YES	1998
Well meets IDWR construction standards	YES	0
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	YES	0
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
Total System Construction Score		1

2. Hydrologic Sensitivity

Soils are poorly to moderately drained	YES	0
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	YES	0
Total Hydrologic Score		2

3. Potential Contaminant / Land Use - ZONE 1A

	IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2
Farm chemical use high	YES	2	0	2
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		4	2	4

Potential Contaminant / Land Use - ZONE 1B

Contaminant sources present (Number of Sources)	YES	1	0	0	0
(Score = # Sources X 2) 8 Points Maximum		2	0	0	0
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	25 to 50% Irrigated Agricultural Land	2	2	2	2
Total Potential Contaminant Source / Land Use Score - Zone 1B		4	2	2	2

Potential Contaminant / Land Use - ZONE II

Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land	2	2	2	
Potential Contaminant Source / Land Use Score - Zone II		2	2	2	0

Potential Contaminant / Land Use - ZONE III

Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone III		1	1	1	0
Cumulative Potential Contaminant / Land Use Score		11	7	9	4

4. Final Susceptibility Source Score

5. Final Well Ranking

5 4 5 5
Low Low Low High

1. System Construction

SCORE

Drill Date	8/1/78	
Driller Log Available	YES	
Sanitary Survey (if yes, indicate date of last survey)	YES	1998
Well meets IDWR construction standards	YES	0
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	YES	0
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
Total System Construction Score		1

2. Hydrologic Sensitivity

Soils are poorly to moderately drained	YES	0
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	YES	0
Total Hydrologic Score		2

3. Potential Contaminant / Land Use - ZONE 1A

IOC Score VOC Score SOC Score Microbial Score

Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high	YES	2	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	NO	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		4	2	4	2

Potential Contaminant / Land Use - ZONE 1B

Contaminant sources present (Number of Sources)	YES	1	0	0	0
(Score = # Sources X 2) 8 Points Maximum		2	0	0	0
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	25 to 50% Irrigated Agricultural Land	2	2	2	2
Total Potential Contaminant Source / Land Use Score - Zone 1B		4	2	2	2

Potential Contaminant / Land Use - ZONE II

Contaminant Sources Present	YES	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land	2	2	2	
Potential Contaminant Source / Land Use Score - Zone II		2	2	2	0

Potential Contaminant / Land Use - ZONE III

Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone III		1	1	1	0
Cumulative Potential Contaminant / Land Use Score		11	7	9	4

4. Final Susceptibility Source Score

5 4 5 5
Low Low Low High

5. Final Well Ranking